Project

Helping farmers build predator-repellent fencing in Sweden

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How it started

In the early 1980s, it was established that wolves had returned to Sweden, specifically to the northwestern part of the province of Värmland, near the Norwegian border [1]. In 1984, wolves killed a few sheep at a small farm in the area[1]. Members of the Association Our Predators (AOP), one of two organisations that later formed the Swedish Carnivore Association (SCA), were quick to try to help the farmer to protect the remaining sheep using ordinary electric fencing (two wires with low voltage spaced up to 50 cm apart), but this did not prevent wolves from getting in. WWF-Sweden contributed additional funds so that, under the auspices of the AOP, more effective fences could be built. After Värmland, Dalsland was next, also with financial assistance from WWF.

State funds began to be distributed in 1989 and the County Administrative Board of Gävleborg contributed to a fence in Hälsingland. It was installed with the help of not only members of the AOP and the Swedish Society for Nature Conservation but also hunters participated in the work. In 2004, a course was held at the Swedish University of Agricultural Sciences, Grimsö, during which 30 people received training in how to install a predator-repellent fence system. This laid the foundation for the organisation we have today, with trained fencing managers in Sweden's various regions and volunteers who help livestock owners to install predator-repellent fences throughout the wolf range (Fig. 1).

Support for fencing

To obtain support for predator-repellent fencing, livestock owners contact their region's fencing manager, who is a skilled fencer responsible for communication with farmers and organising volunteers for each project. At the same time, they apply for a grant from the County Administrative Board. Only fences approved by the Board receive financial support. This is very important for quality assurance, not only of the fence but also of the work of the SCA. The contribution is currently 5.20 EUR per 50 metres. As a rule, this is enough to cover fencing material but not additional costs if the ground has to be cleared and external contractors are hired to do the job.

After aid is granted, the fencing manager and livestock owner meet and together they plan where the fence will

[1] https://www.slu.se/centrumbildningar-och-projekt/viltskadecenter/skador-och-atgarder/skador-pa-tamdjur-och-hundar/rovdjursskador-pa-tamdjur/

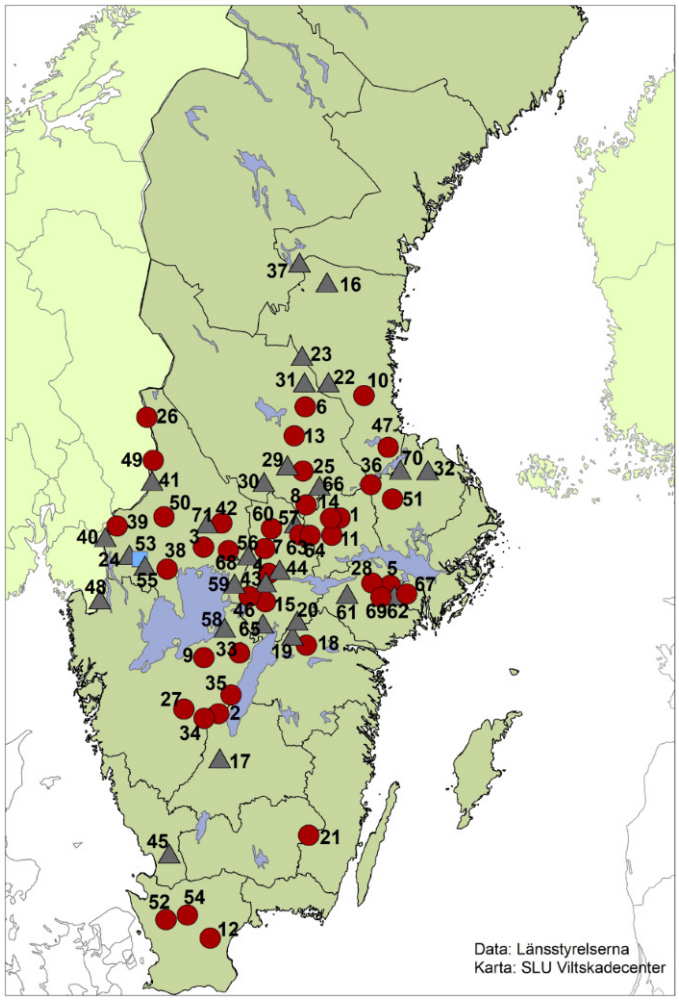

Fig. 1. Wolf packs in Sweden according to the 2023–2024 survey. Circles = breeding packs, triangles = territorial pairs (Source: Swedish University of Agricultural Sciences, Grimsö).

be sited, where corners should be, where gates are needed, etc. Conditions differ from farm to farm. In areas of flat ground, it is usually quite simple to carry out, whereas if there is uneven terrain, boulders, rocky ground or forest, it places higher demands on planning. The ground may have to be levelled with a machine, trees felled or the fence-line diverted to avoid the most difficult sections. On the other hand, it is important to fence natural pastures with rich flora and fauna. People opposed to the wolf often claim that its presence is a threat to biodiversity because it makes it impossible to graze such pastures. Predator-repellent fencing makes it possible to have both.

Fences usually have five tightly tensioned wires with 4,500 volts spaced 20–30 cm apart, with the bottom wire 20 cm above the ground and a total fence height of 110 cm (Fig. 2). The design is based on the fact that wolves prefer to crawl under or step through fences and rarely jump over them. A regular sheep net can also be used. If it has locked knots, a wire 15 cm from the top is sufficient. A sheep net with unlocked knots requires an additional wire at the bottom, on the inner side. This is so that livestock do not press up against the net and squeeze out the mesh when trying to reach grass on the outside.

Volunteer help

Once a new fence has been approved and designed, the livestock owner orders the necessary materials and the fencing manager calls for volunteers to help with construction (Fig. 3). Volunteers are members of the SCA who want to do something practical to avoid wolves being shot and to help with the coexistence of carnivores and livestock. They are recruited via social media, the project webpage, membership newsletter or word of mouth. We currently have about 100–150 volunteers in total, with ages ranging from 20 to 70 and all aspects of society represented. Fencing managers have a list of volunteers in their region and usually arrange between five and ten per project. Depending on their availability, people can volunteer for up to five weekends during spring or autumn.

Most volunteers go through a training period, but many are trained on site (Fig. 4). They work completely free of charge, which is a good deal for livestock owners, who provide them with food, coffee and, where applicable, also accommodation. Anna-Karin Lieber, one of our most dedicated and active members, who has been involved in many fencing projects around the country, says that, "When we are out fencing, we not only help to protect livestock from predators and predators from being shot. It is also an opportunity for us to meet the farmers. We have witnessed several cases where farmers who were initially sceptical of us and negatively disposed towards predators developed a completely different attitude after we helped them build fences."

A total of 200 farmers have been helped and 250 fences built so far. Sheep and goats are prioritised but occasionally fences are built for cattle. We have seven fencing managers, concentrated in the southern provinces. With the help of a WWF project our activities will expand further into the northern provinces.

Fig. 2. Sheep protected with predator-repellent fencing (Photo: Maria Levin).

Experience and recommendations

Predator-repellent fencing has proven to provide good protection against not only wolves and bears but also domestic dogs, which can cause great damage to livestock [2]. Livestock owners may perceive the construction of predator-repellent fencing as a large and costly job. However, once the work is done, it is a good investment for the farm, providing a stable fence that lasts for about 20 years without any maintenance of the fence itself. However, there is a drawback in the grant system: the livestock operation must continue to operate for at least five years, otherwise the owner is liable to repay the grant. This is not a problem for young farmers, but we have noticed that older ones shy away from this commitment because they doubt they will be able to keep going for that long. Instead, some choose to stop keeping livestock and the wolf is then blamed for this. We would therefore like to see some kind of age adjustment of this rule so that even older livestock owners are motivated to choose predator-repellent fencing.

Maintenance is a recurring topic of contention. However, those who have predator-repellent fences report that they are easier to maintain than ordinary fences that are subject to damage by deep snow during winter and so have to be checked each spring, which is not the case of predator-repellent fencing. Nevertheless, there is a need for ongoing maintenance, such as carefully clearing grass

Fig. 3. Volunteers helping to build predator-repellent fencing (Photos: Petter Berndtson).

under the bottom wire, to ensure the fence is fully operational. There is now a subsidy for this of 0.43 EUR per 5 metres, but a humid summer when the grass grows quickly can increase the workload. Grass cutting might be needed once during a dry, hot summer but once per month in a rainy summer. If a sheep net is used this step is avoided.

Next steps

What started as pioneering work when the wolf recolonised Sweden and our association was formed has become an important part of the organisation's soul. WWF has pledged funding until 2025 that will make it easier for us to further develop this part of our activity and to educate more fencing experts around the country by running further training courses (Fig. 5).

Part of the new project will also be to establish reference farms (Fig. 6). We will pay the difference between the grant from the state and the actual cost of fencing in exchange for the farm becoming a demonstration farm to showcase predator-repellent fencing and provide interested parties with information material. The goal is not only to show how predator-repellent fencing works but also to overcome resistance to its use, fostering coexistence with wolves.

Acknowledgements

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References

[1] Wabakken P et al. (2001) The recovery, distribution, and population dynamics of wolves on the Scandinavian peninsula, 1978-1998. Canadian Journal of Zoology 79(4): 710–725.
[2] Frank J et al. (2024) Viltskadestatistik 2023: Skador av stora rovdjur och stora fåglar på tamdjur, hundar och gröda [Wildlife damage statistics 2023: Damage by large predators and large birds to domestic animals, dogs and crops]. SLU Wildlife Damage Centre report 2024-1. URL: https://www.slu.se/globalassets/ew/org/centrb/vsc/vsc-dokument/vsc-publikationer/rapporter/viltskadestatistikrapporter/viltskadestatistik-2023-version-1-1.pdf [in Swedish].

Fig. 4. Participants on a fencing course learning how to construct a parallelogram (Photo: Per Axell).

Fig. 5. A lecture for volunteers on predator-repellent fencing (Photo: Per Axell).

Fig. 6. A farmer and volunteer standing next to a fence part-funded by WWF, constructed by the Swedish Carnivore Association, at a reference farm (Photo: Peter Eriksson).